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ORIGINAL ARTICLE

INSTITUTIONAL DELIVERY SERVICES UTILIZATION BY WOMEN OF CHILDBEARING AGE IN SOUTH WEST SHOWA ZONE, OROMIA REGION

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ABSTRACT

Introduction: *Institutional delivery is very low in Ethiopia, particularly in Oromia where less than one-third of antenatal care attendees utilize the services. This study assessed the magnitude of institutional delivery and associated factors in South West Showa Zone of Oromia.*

Methods: *A cross-sectional community based study was conducted in 2010. A stratified cluster sampling technique used to select study districts, villages and households. Four hundred thirty childbearing women with at least one birth in the past 5 years preceding the survey were interviewed. Qualitative study method was employed to supplement the quantitative data. Data analyses were done using SPSS v15. Frequency tables and percentages were used to describe study population. Association of independent variables with outcome variable was measured using odds ratio with 95% confidence interval. Multivariate logistic regression analysis was run to control for confounding variables.*

Results: *Eighty percent (344) respondents were from rural. Mean age of the women was 28.8 (±6.6). Most (70.5%) respondents and 39% of their husbands were uneducated. A quarter of them delivered at health institutions over five years preceding the survey. In a regression model with maternal age, residence, maternal and paternal education, all were significantly associated with use of institutional delivery services. Obstetric factors have also showed a statistically significant association. The qualitative findings revealed that trust in traditional birth attendants and health workers' negative attitude were among the reasons for not delivering at health institutions.*

Conclusion: *Institutional delivery service utilization in the zone is affected by maternal and paternal education, ANC attendance and duration of labor. Traditional beliefs and health workers' negative attitude were among the identified barriers. Multiple interventions involving community, service providers and health system are recommended.*

Key words*: Institutional delivery, antenatal care, Oromia*

INTRODUCTION

According to World Health Organization (WHO), more than half a million women of reproductive age group die each year from complications related to pregnancy, labor and child birth and 99% of these deaths occurred in developing countries, and among 20 countries with the highest maternal mortality ratio, 19 are in sub-Saharan Africa (1). If Sub-Saharan African countries has to reduce maternal mortality significantly, they should record an annual reduction of 5.5% or more than the current rate of approximately 0.1% (2,3).

Skilled birth attendance is very low in Ethiopia, where maternal and newborn deaths constitute a major public health problem. Studies have shown that the utilization of institutional delivery services (IDS) is affected by complex socio-demographic, economic, and obstetric factors (4-8). The socio-cultural set up of a society has also influences health care seeking behavior and use of existing health services (9,10).

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According to the 2005 Ethiopian Demographic and Health Survey (EDHS), only 6% of births occur at the health facility. This national figure increased only by 4% over the next 5 years with only 10% of women reportedly delivering at health facilities. Trend analysis of health service statistics and EDHS 2005 report on utilization of IDS in the Oromia region showed that less than one-third of antenatal attendees have utilized IDS (11). We, therefore, conducted this study to assess the magnitude and factors affecting the utilization of IDS in South West Showa zone the region.

MATERIALS AND METHODS

Study design and area: A cross-sectional community based study using both quantitative and qualitative methods was conducted in South West Showa zone of Oromia Regional State which is located 115 kms to South-West of Addis Ababa. The zone is subdivided in to 11 *woreda*s (districts), 1 town administration and 285 *kebeles* (villages). The total population of the zone in 2010 was estimated to be 1,003,651 as projected from the 2007 census (12). According to zonal health department's annual report, maternal health services are provided by one non-governmental organization (NGO) hospital (St Luke Hospital), one district hospital, 18 health centers and 66 health posts. Institutional delivery services are provided by mid-level and high-level health workers (nurses, midwives, health officers and physicians) (13).

Source and study population: All women of reproductive age who were residing in South West Showa zone constitute the source population, while the study population constituted all women of childbearing age in the selected *kebeles* who gave at least one birth within five years preceding the survey.

Sample size determination: The sample size was determined using single population proportion formula for a cross-sectional survey with the following assumptions: 95% confidence level, desired precision (d) of 3%, proportion of institutional delivery in the zone (p) 4.8% (9), and non-response rate of 10%; the minimum sample size calculated was 430.

Inclusion and exclusion criteria: Women who gave at least one birth within five years preceding the survey irrespective of the place and outcome of delivery and who were permanent resident of the study area were included in the study. Women of childbearing age who were critically sick during survey time were excluded.

Sampling technique: A stratified multi stage sampling technique was employed with *woreda*, *kebele* and the households sampled in the first, second and third stages, respectively. The zone was subdivided in to two strata based on the physical distance of the *woredas* from the zonal capital (*Wolliso*). *Woredas* located within 15 kilometers radius of the capital were categorized under *stratum one*. Since 85% of the zonal populations are from rural areas, four fifth of the study populations were sampled from the rural *kebeles*. Two *woreda*s per stratum and two rural *kebeles* per *woreda* were selected by using simple random sampling (SRS) technique. Two urban *kebeles* were selected from the capital town of the zone to represent the urban communities. Thus, eight rural and two urban *kebeles* were selected for the study. With the assumption that each *kebele* approximately has 1000 households, the calculated sample size was divided equally among the selected 10 *kebeles* with 43 women of childbearing age in each *kebele*. Each *kebele* was then divided in to four sub-villages /"*gots"*/- a local administrative division-with each sub-village having approximately 250 households. One sub-village/*got*/was randomly selected using a lottery method. Being at the center of the selected sub-village, a pen was filliped with a direction to which the ballpoint directed was set as the direction for data collection. The first household was selected using SRS. A systematic random sampling method, where every 6^{th}(250/43) household was visited, was used to select a total of 43 women of childbearing age who gave at least one birth within five years preceding the survey.

In *kebeles* where adequate sample size was not obtained from a single "*got*", data collection was done from the adjacent "*got*" of the same *kebele*. Whenever two or more eligible respondents are found in a household, one woman was selected by a lottery method. In cases where selected household has no eligible respondent or refused to participate in the study, the next eligible household was selected. If a selected household is closed during the first visit, one more visit is made on the next day before replacing by the next eligible household.

Study variables: In this study, socio-demographic and socio-economic variables, past obstetric history and reproductive health related behaviors were used as independent variables, while utilization of institutional delivery services for the most recent delivery within the preceding five years was taken as the main outcome variable.

Data collection procedure: Data were collected by 10 health extension workers from neighboring *woredas*. All the data collectors were fluent speakers of the local language with good communication. Five experienced maternal health experts (degree holders) were recruited for supervision of the data collection. Data collectors and supervisors were trained for two days using a training manual prepared for this purpose. Class presentations, discussions and role-plays were used to explain the purpose of the study, interview techniques, how to fill in the questionnaires and about obtaining consent from each respondent. Supervisors were further trained for one more day on supervision techniques.

Data collection instruments: Quantitative data was collected by using structured questionnaires designed to include all relevant variables to meet the study objectives. Qualitative study method was employed to further explore socio-cultural, traditional and health facility related factors, which may influence IDS utilization and, which may not be captured by quantitative method. A non-structured open-ended questionnaire was used to conduct Focus Group Discussions (FGDs) which were disaggregated by sex. All the questionnaires were developed in English and translated into *Afan Oromo* (the local language) which was back translated to English to ensure consistency. Pre-testing of the questionnaires was conducted on 32 non-participating women (7% of the sample size) in the neighboring *kebele* of Woliso *woreda.* Based on the findings of the pre-test some amendments were made to the final tool.

Data Management: Data entry, cleaning, and analysis were undertaken using Epi-info version 3.5.1 and SPSS v15 statistical packages. Distribution of the study subjects by independent variables were described using frequency tables and percentages. Presence and strength of the association of the independent variables with the outcome variable (IDS utilization) was checked by computing odds ratio with 95% confidence interval (95% CI) in the bivariate analysis. Multivariate logistic regression analysis was run using variables that have shown significant association in the bivariate analysis to control for confounding variables and to identify factors that are independently associated with the utilization of IDS. Data from FGDs which were tape-recorded and noted by note takers was first transcribed and then translated into English. The translated version of the data was coded and summarized thematically. The emerged themes are included into the final report.

Data quality assurance: To ensure data quality enumerators and supervisors who have good experiences in community based surveys were selected for the study. They were adequately trained on data collection and supervision techniques. Data collection instrument was pretested before the actual survey. In each study *kebele*, data collection process was closely followed-up by supervisors and the principal investigators with spot checking to ensure the quality of the collected data. Any difficulties, ambiguities or misunderstandings were cleared on the spot. The collected data was checked for completeness and consistency before data entry. Frequency of each variable was run to check for outliers.

Ethical issues: Ethical clearance was obtained from the Institutional Review Board (IRB) of Addis Ababa University. Permission letter was obtained from all relevant authorities and sectors before the survey. Informed verbal consent was obtained from each study participant before the administration of the questionnaire. No respondent's name was recorded and information obtained from the respondents was kept confidential. The benefits and potential risks of the study were clearly communicated to the study participants. Only those who consent to participate were finally interviewed.

RESULTS

A total of 430 respondents from eight rural and two urban *kebeles* were interviewed and all participants responded to the interview making a response rate of 100%. Out of the total respondents, 344 (80%) were from the rural *kebeles.*

Socio-demographic characteristics: About three-fourth (74%) of the respondents were in the age group 20-34 years (Table). The mean (±SD) and median ages of the women at the time of the interview was 28.8 (±6.6) and 28 years, respectively. Most (70.5%) of the respondents were not educated while 93(21.6%) and 34(8%) have attended grade 1-8 and 9^{th} plus, respectively. On the other hand about two-fifths (39%) of respondents' husbands were not educated. Most (93%) of the women were married, 313 (73%) were followers of Orthodox Christianity and 355(82.6%) were from Oromo ethnic group. Half of the respondents 219(51%) and 306(71%) of their husbands were farmers. The proportions of employed respondents or their husbands were very low with only 8(14.7%) of respondents and 86(20%) of their husbands employed either in government or private

organizations. About half (52%) of respondents reported a household monthly income of less than 500 ETB.

Obstetric characteristics: Adolescent childbearing was highly prevalent in the study area with six in ten of the study population 255(59%) [211(61.3%) of rural and 44(51.2%) of urban] had given birth to their first child before the age of 20 years. The mean (±SD) and median ages of the respondents at the time of the first childbirth was 19.2 (±3.1) and 19 years, respectively.

About 85% of the respondents reported to have two or more pregnancies. More mothers from rural 307 (89%) than from urban 56 (65%) reported to have two or more pregnancies in the past. Seventy percent of respondents attended antenatal care (ANC) during their last pregnancy with more mothers from urban (71%) than rural (65%) reporting ANC attendance for their last pregnancy. In this study, 245 (71%) study participants reported attendance of ANC four or more times with more respondents from urban (82%) than rural areas (68%) reported attending ANC four or more times for their last pregnancy.

A quarter 109(25%) of the respondents reported delivering their last child at health institution with significantly higher proportion of women from urban 70 (81%) than from rural areas 39 (11%) reported delivering at health institutions. With regard to mode of deliveries, about four in five (79%) women reported to have had spontaneous vaginal deliveries. Only 23 (21%) women reported assisted vaginal delivery or caesarean sections. The duration of labor in most 361 (84%) respondents were less than 12 hours. Majority of the respondents (76.5%) reported that decisions related to seeking delivery services at health institution were made by their husbands.

Out of the total 321 mothers who delivered their last child at home, 208(65%) mothers stated that short duration of labor was the main reason for home delivery while a third of them (32.7%) reported home delivery as a “traditional practice” they were exercising.

Table 1: Socio-demographic and Socio-economic characteristics of participants in institutional delivery services utilization study by place of residence, South West Showa, Oromia, Ethiopia, May 2011

Variable	Urban, n (%)	Rural, n (%)	Total, n (%)
Age of the mother			
<20 years	4 (4.6)	11 (3.2)	(3.5)
20-34 years	(81.4)	248(72.1)	318 (74.0)
35+	(14.0)	85 (24.7)	97 (22.5)
Mean ±SD (median) age	**27.1±5.9 (26.0)**	**29.2±6.8 (28.0)**	**28.8±6.6 (28.0)**
Maternal Education			
Not educated	23 (26.7)	280 (81.4)	**303 (70.5)**
Grade 1-8	34 (39.5)	59 (17.2)	(21.6)
Grade 9 or above	29 (33.7)	5 (1.5)	34 (7.9)
Paternal Education (n=399)			
Not educated	8 (10.7)	147 (45.4)	155 (38.8)
Grade 1-8	32 (42.7)	148 (45.7)	180 (45.1)
Grade 9 or above	35 (46.6)	29 (8.9)	64 (16.0)
Current marital status			
Married	75 (87.2)	324 (94.2)	(92.8)
Not married	11 (12.8)	20 (5.8)	31 (7.2)
Religion			
Orthodox	51 (59.3)	262 (76.2)	(72.8)
Muslim	20 (23.3)	73 (21.2)	(21.6)
Protestant	15 (17.4)	9 (2.6)	24 (5.6)
Ethnicity			
Oromo	49 (57.0)	306(89)	355 (82.6)
Others	37 (43.0)	38 (11)	75 (17.4)
Maternal Occupation			
Employed	33 (38.4)	30 (8.7)	63 (14.7)
Housewives	53 (61.6)	95 (27.6)	148 (34.4)
Farmers	0 (0)	219 (63.7)	219 (50.9)
Paternal Occupation			
Employed	69 (80.2)	17 (6.9)	86 (20.0)
Farmers	(1.2)	305 (88.7)	306 (71.2)
Unemployed*	16 (18.6)	22 (6.4)	38 (8.8)
Household income per month			
Less than 500 ETB	55 (64.0)	169 (49.1)	224 (52.1)
501-1000 ETB	18 (20.9)	141 (41.0)	159 (37.0)
More than 1000 ETB	9 (10.5)	10 (2.9)	19 (4.4)
Don't know	4 (4.7)	24 (7.0)	28 (6.5)

*include students and jobless

Table 2: Obstetric characteristics o and household decision making power among participants in institutional delivery services utilization study by place of residence, South West Showa, Oromia, Ethiopia, May 2011

Variable	Urban, n(%)	Rural, n (%_	Total, n(%)
Mother's age at first birth			
< 20 years	44 (51.2)	(61.3)	255 (59.3)
20+ years	42 (48.6)	(38.7)	175 (40.7)
Mean ±SD (median) age	**19.6±3.4 (19.0)**	**19.0±3.0 (19.0)**	**19.2±3.1 (19.0)**
Mother's age at birth of last child			
<20 years	12 (14.0)	29 (8.4)	41 (9.5)
20-34 years	68 (79.0)	267 (77.6)	335 (77.9)
35+ years	6 (7.0)	48 (14.0)	54 (12.6)
Mean ±SD (median) age	**24.9±5.4 (24.0)**	**27.4±6.4 (26.0)**	**26.9±6.3 (26.0)**
Number of pregnancies			
One	30 (34.9)	37 (10.8)	67 (15.6)
2 or more	56 (65.1)	307 (89.2)	363 (84.4)
Attended ANC during last pregnancy			
Yes	56 (65.1)	245 (71.2)	301 (70.0)
No	30 (34.9)	99 (28.8)	129 (30.0)
Number of ANC visits (n=301)			
Less than 4 times	10 (17.9)	78 (31.8)	88 (29.2)
4 or more times	46 (82.1)	167 (68.2)	213 (70.8)
Place of delivery of last child			
Health Institution	70 (81.4)	39 (11.3)	109 (25.3)
Home	16 (18.6)	305 (88.7)	321 (74.7)
Mode of Delivery			
Spontaneous Vaginal Delivery	61 (87.1)	25 (64.1)	86 (78.9)
Assisted delivery or Caesarian Section	9 (12.9)	14 (35.9)	23 (21.1)
Duration of Labor			
Less than 12 hours	67 (77.9)	294 (85.5)	361 (84.0)
12 hours or more	19 (22.1)	50 (14.2)	69 (16.0)
Decision maker at household level			
Husband	48 (55.8)	281 (81.6)	329 (76.5)
Wife	38 (44.2)	15 (4.4)	53 (12.3)
Others*	0 (0)	48 (14.))	48 (11.2)

* include mothers, mother-in-law, and grandmothers

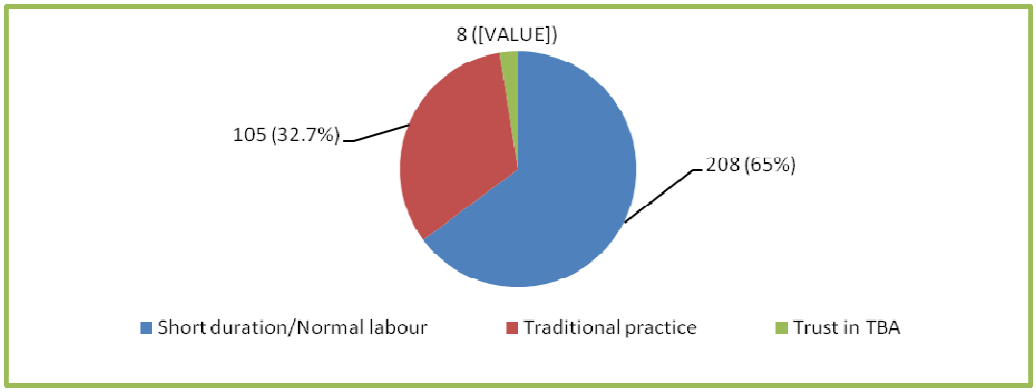

Figure1. Reasons for home delivery of the last child cited by participants in an institutional delivery services utilization study, South West Showa Zone, Oromia, Ethiopia, May 2011

Factors associated with institutional delivery services utilization: Bivariate analysis showed that age of the women, urban residence, maternal and paternal education and employment and maternal decision-making power were significantly and positively associated with utilization of IDS while being a follower of orthodox Christianity and Oromo ethnic group were found to be negatively and significantly associated with IDS utilization.

In a blocked regression model with socio-demographic variables, maternal age, place of residence, maternal education, paternal education and women's decision-making role all were found to be significantly associated with the use of IDS in the expected direction. Women who were less than 25 years old were more than twice more likely than women who were 25 years or older to use IDS (AOR 2.2; 95%CI: 1.1 - 4.5)].The analysis also showed that urban mothers were twelve times more likely than rural mothers to use IDS (AOR 12.1;95% CI:2.8, 53.0). Education is an important factor predicting IDS utilization. In this study both maternal and paternal education were found to affect IDS utilization significantly. Mothers who were educated were about twice more likely than mothers who were non-educated to use IDS (AOR 2.2; 95% CI: 1.1- 4.6)). Similarly, wives whose husbands were educated were more than two times more likely than wives whose husbands were non-educated to utilize IDS (AOR 2.4; 95% CI: 1.1, 5.4).

Bivariate analysis of obstetric variables showed that being younger than 20 years of age at the time of last delivery, having ANC follow-up for their last delivery, giving birth to the first baby and duration of labor were significantly associated with utilization of IDS.

A multivariate logistic regression analysis of obstetric factors was also computed separately to control confounding variables and to identify independent predictors of IDS utilization. Accordingly, having ANC follow up, the first three births, and duration of labor were found to be positively associated with IDS utilization. Mothers who reported to have ANC follow up during their last pregnancy were about two times more likely to give birth at health institution (AOR 1.92; 95%CI: 1.16 - 3.17) compared to mothers with no ANC follow up. Similarly mothers who gave birth to the first baby were more than 7 times more likely to use IDS compared to those who gave birth to their 4^{th} or more child (AOR 7.31;95% CI:2.93,-18.2), while those mothers who gave birth to their 2^{nd} or 3^{rd} baby were two times more likely to use IDS compared to those mothers who gave birth to their 4^{th} or more child (AOR 2.03; (95% CI 1.06, 2.9). Duration of labor is another factor signaling use of IDS. In the present study mothers whose labor lasted 12 or more hours were more than four times more likely to use IDS compared to mothers whose labor lasted less than 12 hours (AOR 4.21; 95% 2.37, 7.5).

In a combined model where obstetric factors (ANC attendance for last pregnancy, birth order and duration of labor) were modelled with socio-demographic factors all showed statistically significant association while birth order did not. The first set of variables remained significant with little change in adjusted odds ratio in the saturated model except respondents' age which lost its significant association. Respondent's decision making was omitted from the model because of collinearity.

Table 3: Association of Socio-demographic Factors with Utilization of Institutional Delivery services in South West Showa Zone, Oromia, Ethiopia, May 2011.

Variable	Utilized IDS		Crude OR (95% CI)	Adjusted OR (95% CI)
	Yes	No		
Age of respondents				
< 25 years	39	69	**2.04 (1.27, 3.27)**	**2.2 (1.1, 4.5)**
>= 25 years	70	252	1.00	
Place of residence				
Urban	70	16	**34.2 (18.1, 64.7)**	**12.1 (2.8, 53.0)**
Rural	39	305	1.00	
Maternal Education				
No education	38	265	1.00	
Educated (Grade 1 or above)	71	56	**8.84 (5.43, 14.41)**	**2.2 (1.1, 4.6)**
Husband Education				
No education	13	142	1.00	
Educated (Grade 1 or above)	87	157	**6.1 (3.24, 11.31)**	**2.4 (1.1, 5.4)**
Maternal Occupation				
Employed	35	28	**9.7 (5.1, 18.6)**	1.54 (0.39, 5.9)
Housewives	49	99	**3.8 (2.2, 6.6)**	0.71 (0.28, 1.8)
Farmers	25	194	1.00	
Husband Occupation				
Employed	64	22	**4.9 (2.2, 11.3)**	1.63 (0.37, 7.26)
Farmers	31	275	**0.2 (0.09, 0.41)**	1.08 (1.00, 11.6)
Unemployed	14	24	1.00	

Table 4: Association of Obstetric Factors with the Utilization of Institutional Delivery Services among respondents in South West Showa Zone, May 2011.

Variables	Utilized IDS		Crude OR, (95% CI)	Adjusted OR, (95% CI)
	Yes	No		
Age at birth of last child				
<20 years	20	21	**3.8 (1.91, 7.51)**	0.84 (0.33, 2.2)
20-24 years	39	101	1.54 (0.95, 2.49)	0.75 (0.40, 1.4)
25+ years	50	199	1.00	
Attended ANC for last pregnancy				
Yes	45	84	**1.98 (1.26, 3.13)**	**1.92 (1.16, 3.17)**
No	64	237	1.00	
Birth order				
1^{st}	37	31	**6.67 (3.45, 12.9)**	**7.31 (2.93, 18.2)**
2^{nd}or 3^{rd}	50	167	**1.67 (0.96, 2.91)**	**2.03 (1.06, 2.9)**
$\geq 4^{th}$	22	123	1.00	
Duration of labor				
<12 hours	71	290	**1.00**	
>=12 hours	38	31	**5.01 (2.92, 8.60)**	**4.21 (2.37, 7.5)**

Table 5: Logistic Regression Analysis Model with Socio-demographic and Obstetric factors and Utilization of Institutional Delivery Services in South West Showa Zone, Oromia, Ethiopia, May 2011

Variable	Utilized IDS		Crude OR (95% CI)	Adjusted OR (95% CI)
	Yes	No		
Age of respondents				
< 25 years	39	69	**2.04 (1.27, 3.27)**	0.82 (0.23, 2.93)
>= 25 years	70	252	1.00	
Place of residence				
Urban	70	16		
Rural	39	305	**0.03 (0.02, 0.06)**	**0.03 (0.01, 0.06)**
Maternal Education				
No education	38	265	1.00	
Educated (Grade 1 or above)	71	56	**8.84 (5.43, 14.41)**	**2.55 (1.13, 5.75)**
Husband Education				
No education	13	142	1.00	
Educated (Grade 1 or above)	87	157	**6.1 (3.24, 11.31)**	**3. 59(1.50, 8.65)**
Attended ANC for last pregnancy				
Yes	45	84	**1.98 (1.26, 3.13)**	**2.76(1.30, 5.89)**
No	64	237	1.00	
Birth order				
1^{st}	37	31	**6.67 (3.45, 12.9)**	0.51 (0.16, 1.59)
2^{nd}or 3^{rd}	50	167	**1.67 (0.96, 2.91)**	0.45 (0.11, 1.83)
$\geq 4^{th}$	22	123	1.00	
Duration of labor				
<12 hrs	71	290	**1.00**	
>=12 hrs	38	31	**5.01 (2.92, 8.60)**	**9.16 (3.91, 21.5)**

Qualitative findings: Six Focus Group Discussions (FGDs) consisting of 6-8 people per FGD were conducted in the study area. A total of 48 people consisting of women of reproductive age, their husbands, influential people and community members have participated in the FGDs. The findings from the six FGDs are summarized as follows:

Why do women deliver at home? Why not at health institutions? Most community members and influential people believe that home delivery is a traditionally accepted practice in the zone. Socio-cultural beliefs in the community such as "*ayaana,* and *ateetee*" encourage home deliveries. Such beliefs also encourage harmful traditional practices like abdominal massages of pregnant women by traditional birth attendants or older women in the village. The discussants mentioned these traditional practices and values as some of the reasons for preferring home deliveries. They mentioned that ceremonies held at home during delivery (*preparation of porridge and coffee, being in a warm and home environment*) and the values attached to being attended by relatives who render them the best care and the concern about the members of the household who are left behind when the mother goes to health facility for delivery were among the reasons cited by the discussants.

"*Health facilities do not provide what laboring mothers traditionally supposed to get immediately after delivery…like porridge, coffee ….and in addition health centers are very cold…and health workers also expose women to cold…"* a 34 years old woman participant

"We women are very shy to expose our bodies to male health workers…when we are in life-threatening condition however, we have no choice…" a 28 years old woman FGD participant

The FGD discussants mentioned that most women deliver at home because of short and sudden onset of

labor that did not give them adequate time to bring or transport a laboring mother to the health institution. Moreover, most labors occur at night time during which the women or their families cannot find any means of transportation. They added that night time is inconvenient for people to carry a laboring mother using local means of transport - the "Kareza" –a locally made stretcher used for transport – because of the poor road and light conditions particularly in rural areas. Unless the women face obstetric complications or some danger signs like bleeding they don't usually opt for institutional delivery.

"… we usually give birth at home for the labor comes suddenly and it usually comes at night…it is also difficult to get transportation at night…." A 32 years old woman

A 35 years old FGD participant from the men group said,
"…yes, night time labor is challenging… it would have been possible to carry laboring mothers using "Kareza" if it was during the day time….it is also difficult to get people who support you at night time…

Most men discussants on the other hand would have liked their wives to deliver at health institutions. However, they could not do so because of lack of transportation during night time, lack of money to pay for transport, fear of referral to other facilities that would incur them additional costs and the way they are treated at health institutions. They blamed the health workers for not allowing them to the delivery room to see how well the laboring mothers and/or the newborn babies are doing. They said they were kept outside until the mother is discharged from the health facilities. This has created a psychological feeling of departure from the loved one. A 40 years old man said,

"Giving birth is like death and has to be attended by a close companionship like husbands, mothers or grandmothers. But we are not allowed to see them (the mother or the baby)…The health workers keep us out and mistreat us as if we are homeless…"

Most women discussants also mentioned about the non-welcoming attitude of the health workers, particularly, to the laboring mothers as a reason for not choosing health facilities for delivery.

"…Unless we face life-threatening conditions we don't go to health facilities. Health workers are not treating us very well. Some service providers are unkind, unfriendly and don't respect laboring mothers. They keep our companions out… they don't even know what happens to us (me or the baby)….At home they follow every process…" a 37 years old woman

Some discussants did not trust the skill and capacity of the health workers. They also blamed the low quality of services provided at health facilities, unavailability of essential drugs and lack of ambulance for referral services at some health facilities. A 28 years old woman said,

"*…Some health workers don't have the skill to assist laboring mothers…they don't have drugs and they refer us to other hospitals….there is no ambulance to take us to hospitals…then, what is the point of going to health facility?..."*

DISCUSSION

The study tried to determine the magnitude and factors influencing utilization of institutional delivery services (IDS) in South West Showa zone of Oromia region. Various studies showed that utilization of IDS is influenced by socio- demographic and obstetric factors including maternal and paternal education, place of residence, maternal and paternal occupation, availability and cost of health services, availability and cost of transportation, parity, birth order and status of prenatal care (4-8)**.**

The present study revealed that IDS utilization in the study area was low with only about a quarter of (25.3%) participants reported use of IDS. However, the finding is better than the national level and the findings from North Gondar zone (10,14). The magnitude of IDS utilization in the study area was about two times of that of IDS utilization in north Gondar zone (13.5%) while it is more than two fold of the national IDS utilization (10%). The current expansion of health facilities across the region and deployment of health workers, particularly the availability of health extension workers who educate and counsel mothers to deliver at health institutions have contributed to a great extent in strengthening community awareness and mobilization in IDS utilization. On the other hand, with the rapid expansion of health facilities (health centers and health posts), one would have expected the magnitude of IDS utilization in the zone to be more than the current finding. Our finding may provide some clue to the need to improving quality of skilled service delivery in addition to structural expansion, human resource deployment and awareness creation. This has been substantiated

by the qualitative findings where participants raised their concern about the skill and the capacity of health care providers in the locality in assisting laboring mothers and lack of essential drugs.

Maternal health studies conducted in developing countries indicated that distance from health facilities, availability and accessibility of services or availability of all-weather roads connecting the village with the facilities influences the utilization of IDS (4-6,8,14,15). The current study revealed that rural mothers are less likely than urban mothers to deliver at health institutions. Most community based maternal health studies have indicated that urban mothers utilize IDS more than rural mothers (4,5,8,15). These differences could be attributed to various factors such as access to all weather roads and convenient means of transportation and more awareness about the benefits of IDS and ability to pay for services by urban dwellers. In addition, urban mothers have better access to health information, may attend ANC services more frequently and regularly than rural mothers and are closer to hospitals and health centers than the rural mothers. In the FGD participants indicated that distance of the health institutions from their home, difficulty of transporting pregnant mothers on rough roads, lack of light and means of transportation particularly at night time, and extra cost incurred in case of referrals were among the reasons for not utilizing IDS in the area.

Education is a key to health service utilization (4-8,15, 16). In this study educated mothers were more than two times more likely to use IDS than non-educated mothers (AOR=2.55, 95% CI:1.13, 5.75). Similarly, paternal education has influenced IDS utilization in the positive direction. Mothers whose husbands were educated were more than three times more likely than those mothers with non-educated husbands to utilize IDS (AOR=3.59, 95%CI: 1.50, 8.65). The finding of this study is consistent with other similar studies (5,8). The explanation behind these facts is that while educated mothers could make own decision to use reproductive health (RH) services, educated husbands could also give more financial and moral support for delivery at health institutions beside rendering their wives full right and freedom to choose and make own RH decisions. Having an educated husband and wife in a household is an important tie to use reproductive health services. While an educated woman can make own decision to use RH services the support she obtains from an educated husband is an added advantage.

Various maternal health studies indicated that the use of prenatal follow-up is positively associated with the utilization of IDS (4,5,15,16). The present study also indicated that ANC attendees were more than two times more likely than non-attendees to give birth at health institutions (AOR=2.76, 95%CI: 1.30, 5.89). ANC attendees get better opportunities to discuss on benefits of institutional deliveries, birth preparedness and complication readiness from the counseling services during ANC visits. It is natural that such information from health care workers aid pregnant mothers to plan for and utilize IDS.

Duration of labor is an important factor signaling utilization of IDS. Most empirical evidences showed that even poor rural mothers are taken to health facilities when labor is prolonged. The current study revealed that duration of labor is positively and strongly associated with utilization of IDS (AOR=9.16, 95% CI:3.91, 21.5).This finding is similar to the study done in North Gondar zone (14) where mothers with longer duration of labor are about five times more likely to seek delivery services in health institutions. The finding has also been substantiated by the qualitative findings where discussants emphasized that mothers in the study zone usually seek IDS whenever labor is prolonged or if some danger signs that are threatening the lives of mothers are seen.

Precipitated labor, traditional beliefs and values such as the need to have birth ceremonies in a warm delivery environment with better care and comfort, beliefs and trust in traditional birth attendants, care from families and close companions, lack of trust and confidence in service providers, health workers' negative attitude towards laboring mothers and their companions, poor quality of care/service provided at health institutions were among the factors identified to affect IDS negatively in the qualitative findings. The current findings are similar to studies done elsewhere in Ethiopia and other developing countries (14, 17-20).

Limitation of the study: The study could have a recall bias since respondents were asked information for events that happened over five years preceding the survey. It is difficult to establish causal relationship between exposure and outcome variables due to the nature of the study design.

Conclusion and Recommendations: The study revealed that the proportion of IDS utilization in the study area is low (25.3%). However, it is better than the national IDS utilization. Set of socio-

demographic factors such as place of residence, maternal education, paternal education were found to influence the utilization of IDS in the study area. Similarly, obstetric factors such as the use of prenatal care and duration of labor were among the predictors of utilization of IDS. The study also identified sociocultural factors like traditional beliefs and values attached to home deliveries, trust in traditional birth attendants and the need for better care by families and relatives as well as health care related factors such as lack of confidence in the skill and capacity of health care providers, negative attitude of health workers towards laboring mothers and their companions and quality of care provided at health institutions as factors affecting utilization of IDS.

To improve the utilization of institutional delivery services multiple interventions that addresses the community, service providers, the health institutions and the health system are important. Community awareness raising and mobilization activities with particular attention on rural communities should be given due emphasis. Education of the communities and particularly girls' education is critical to use reproductive health services such as delivery services. Improving quality of maternal health services with main focus on prenatal care and delivery services must be given due attention. It is important to build the skill and capacity of service providers through in service training and reversing their negative attitude towards laboring mothers and their companions. Staffing health facilities with skilled and capable staff preferably health workers with midwifery skills and positive attitude towards laboring mothers is recommended.

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